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source of the pressure with the storage tank, and a second line connecting the storage tank to a spray nozzle in a manner to transfer the tack material in the storage tank to the spray nozzle.

RESPONSE

1. The examiner has objected to the drawings for failure to include reference number 26. A new informal figure 2 containing the reference number 26 is submitted herewith. The examiner is respectfully requested to accept this for purposes of examination, and to allow the applicant to submit formal corrected drawings at the conclusion of prosecution of this application.
2. The examiner has objected to claim 13 and the claims dependent thereon because the phrase "the source of pressure" lacks antecedent basis. Additionally, in reviewing the claim, the applicant has noticed that the phrase "the exhaust pipe" lacks antecedent basis. Accordingly, the applicant has submitted an amended claim 13 to address these antecedent basis concerns. The applicant believes that the amendments to claim 13 are sufficient to resolve all such issues, and respectfully requests that the § 112 objections be withdrawn.
3. The examiner has rejected claims 1-21 for obviousness under 35 U.S.C. § 103 over U.S. Patent 5,522,543 to Herzog ("Herzog") in view of U.S. Patent 4,828,429 to Kirchner, *et al.* ("Kirchner"). Those rejections are respectfully traversed and reconsideration of the same is respectfully requested.
4. As the examiner is aware, he has the burden of establishing a *prima facie* case of obviousness. MPEP § 2142. To establish a *prima facie* case of obviousness based upon the combination of references, the examiner must show, *inter alia*, that there is a teaching or suggestion in the prior art to make the combination. In re Mills, 916 F.2d 680, 682 (Fed. Cir.

1990); MPEP § 2143.01. It is inappropriate to use the claimed invention as a template to piece together the teachings of the prior art. In re Gorman, 933 F.2d 982, 987 (Fed. Cir. 1991); MPEP § 2141 (forbidding hindsight combinations).

5. The examiner has not made any showing that there is a teaching or suggestion in the prior art to combine the elements of Herzog and Kirchner. To this end, the examiner has only stated "it would have been obvious to one having ordinary skill in the art to have provided the device of Herzog with a tack material for spraying as suggested by Kirchner, since it would provide a way to distribute bituminous products to road surfaces (column 1, line 11(of Kirchner))."

6. With all due respect, the foregoing statement simply does not point to anything in Kirchner or Herzog that suggests combining the two references. Kirchner admittedly teaches a system and method for applying tack (bituminous material). However, nothing in Kirchner teaches or suggests using the exhaust from a combustion engine to provide pressure for the application of tack. Similarly, Herzog discloses a system that uses the exhaust gas from a combustion engine to pressurize and apply water. However, there is nothing in Herzog that suggests using such a system to pressurize and apply tack. Most importantly, the examiner has not pointed to anything in either reference that would suggest a reason to combine the two. Rather, the examiner appears to have used the applicant's disclosure as a template, seeking out a pressurization system in one reference and a tack application system in another and combining them together for no articulated reason. Such hindsight reconstruction of the applicant's invention is prohibited, and is certainly not sufficient to establish the examiner's *prima facie* case of obviousness. MPEP §2143; In re Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

7. There are several other reasons why the examiner's combination of Herzog with Kirchner

is improper. To establish a *prima facie* case of obviousness, the examiner must show that the prior art suggests the desirability of the claimed invention. MPEP § 2143.01. Nothing in the prior art suggests the desirability of using the pressurization technique of Herzog to apply tack, nor has the examiner pointed to any such teaching or suggestion. Similarly, nothing in Kirchner teaches or suggests the desirability of pressurizing tack with exhaust gasses, nor has the examiner pointed to any such teaching. In the absence of such a showing, the examiner simply has not established a *prima facie* case of obviousness.

8. The combination of Kirchner with Herzog would also render a central feature of the invention largely unnecessary. Kirchner contains a hydraulic pump 34 whose sole purpose is to remove tack from the tank. If the device of Kirchner were combined with Herzog, there would be no need to use the pressure created by the exhaust fumes to expel the tack from the tank. Thus, the combination of Kirchner and Herzog would require the principle of operation of the Kirchner device to be changed from a pump driven applicator to a vessel pressure driven applicator. It is improper for a proposed modification to change the principle of operation of a reference. MPEP § 2143.01. This is yet another reason why the combination of Herzog with Kirchner is improper.

9. There is no reason, outside of the applicant's disclosure, to expect that the use of exhaust gasses to pressurize and apply tack would be successful. Tack is a substantially different material than water. It is much more viscous, and thus can be more difficult to pump. Tack is also more likely to congeal than water, again making pumping difficult. The mere fact that one might be able to use engine exhaust to pressurize and apply water does not mean that it could be used to apply tack. Moreover, the examiner has cited nothing that teaches or suggests that using engine

exhaust to pressurize and apply tack would have been expected to work, at the time of applicant's invention. To establish his *prima facie* case, the examiner must show that there would have been a reasonable expectation of success. MPEP 2143. This, the examiner simply has not done, and the combination of Herzog with Kirchner is, accordingly, improper.

10. For the reasons stated above, the examiner has not established a *prima facie* case that independent claims 1 and 13 and the claims that depend therefrom are obvious. Therefore, the applicant requests that the rejections for all claims be withdrawn.

11. Turning to specific dependent claims, the examiner has not met his *prima facie* case with respect to these claims either. As the examiner is aware, he has the burden of establishing that each limitation of the claimed invention is found in the prior art. MPEP §§ 706.02 (j); 2143.03. With respect to claims 7, 10, 19, and 21, the examiner has not attempted to show where these limitations may be found in the prior art. Rather, the examiner has merely concluded that these are optimal values of result effective variables, and thus that they involve only routine skill in the art citing, In re Boesch, 617 F.2d 272 (CCPA 1980). Additionally, the examiner has provided no discussion whatsoever of dependent claims 8 and 9 or of dependent claims 20 and 21. This is clearly improper.

12. Claims 7-10 and 19-21 all deal with similar subject matter. Claims 8 and 9 and claims 20 and 21 recite a functional limitation¹ on the size of the spray nozzle orifice, i.e. being larger than the diameter of polymer balls which can clog the nozzle. Claims 7 and 10 and 19 and 21 address

Note that there is no prohibition against claiming limitations functionally, i.e., by what they do rather than what they are. MPEP § 2173.05(g).

the same issue, the size of the nozzle orifice; however, they claim it structurally rather than functionally. While the claims are not identical, the applicant believes they can be fairly discussed together, in the present context.

13. The problem these claims address is clogging in the nozzle. One cause of clogging is polymer balls that can form in the tack. These balls can lodge in the nozzle orifice. They will catch more tack as it passes through the orifice, and can eventually block flow through the orifice altogether. Nothing in the cited prior art addresses this problem or a manner of addressing it. Therefore, the examiner's reliance on Boesch is not well founded.

14. In Boesch, variation of the result specific variables was specifically suggested by the prior art in question ("In the above-quoted passage from (the prior art patent), we note that lowering the N v value of a Co-Cr-Ni alloy and deletion of the metals not consumed in precipitation from the N v calculation are expressly suggested") Boesch, 617 F.2d at 276 (CCPA 1980). Because the variation was specifically suggested, the CCPA concluded that the experimentation necessary to find the optimal value would have been suggested by the prior art. Id., at 276.

15. The conditions in Boesch can be contrasted with the present case wherein the prior art cited by the examiner does not address the problem which is the focus of claims 7-10 and 19-21, clogging caused by polymer balls. Nor, does the prior art address ways of resolving the difficulty. In the absence of something in the prior art which suggests modifying the nozzle orifice size to address the polymer ball problem, there is no basis to conclude that the sizing claimed by the applicant would have been obvious to one of ordinary skill.

16. Moreover, the proper way to evaluate sizing requirements is set out in the MPEP at § 2144.04 IV(A). The relevant case is Gardner v. TEC Systems, Inc., 725 F.2d 1338 (Fed. Cir. 1984). In

Gardner, the Federal Circuit upheld the district court's finding of obviousness because (1) the only difference between the prior art and the claimed device was a recitation of relative dimensions², and (2) a device having the claimed dimensions *would not perform differently* than the prior art device. Gardner, 725 F.2d at 1349 (emphasis added). The same cannot be said for the present case. A device having the size limitations of the nozzle orifice would perform differently from the prior art - polymer balls would not get stuck in the nozzle as frequently and the claimed device would, therefore, dispense tack more evenly. Accordingly, to the extent that the examiner has disregarded the limitations of claims 7-10 and 19-21, his rejections of those claims are not well founded and should be withdrawn.

17. Conclusion Based on the above amendments and remarks, I believe that all of the claims remaining in the case are allowable and an early Notice of Allowability is respectfully requested. If the examiner believes a telephone conference will expedite the disposition of this matter, he is respectfully invited to contact this attorney at the number shown below.

Dated: April 11, 2002

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The applicant is not conceding that the only difference between the claimed invention and the prior art is the sizing of the orifice. Rather, this argument is presented in the alternative only, as it is unnecessary to reach these issues until the examiner establishes a proper *prima facie* case with respect to the independent claims, as discussed above.